

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2010-1045; Directorate Identifier 2010-NM-101-AD; Amendment 39-16809; AD 2011-19-04]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus Model A318, A319, A320, and A321 Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing airworthiness directive (AD) that applies to the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

One case of elevator servo-control disconnection has been experienced on an aeroplane of the A320 family. Investigation has revealed that the failure occurred at the servo-control rod eye-end.

Further to this finding, additional inspections have revealed cracking at the same location on a number of other servo-control rod eye-ends. In several cases, both actuators of the same elevator surface were affected. The root cause of the cracking has not yet been determined and tests are ongoing.

A dual servo-control disconnection on the same elevator could result in an uncontrolled surface, the elevator surface being neither actuated nor damped, which could lead to reduced control of the aeroplane.

\* \* \* \* \*

We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective October 21, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 21, 2011.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 227-1405; fax (425) 227-1149.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on November 8, 2010 (75 FR 68548), and proposed to supersede AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

One case of elevator servo-control disconnection has been experienced on an aeroplane of the A320 family. Investigation has revealed that the failure occurred at the servo-control rod eye-end.

Further to this finding, additional inspections have revealed cracking at the same location on a number of other servo-control rod eye-ends. In several cases, both actuators of the same elevator surface were affected. The root cause of the cracking has not yet been determined and tests are ongoing.

A dual servo-control disconnection on the same elevator could result in an uncontrolled surface, the elevator surface being neither actuated nor damped, which could lead to reduced control of the aeroplane.

To address this unsafe condition, EASA [The European Aviation Safety Agency] AD 2008-0149 [which corresponds to FAA AD 2009-17-04] was issued to require a one-time inspection of the elevator servo-control rod eye-ends for aeroplanes which have accumulated more than 10,000 total Flight-Cycles (FC) since aeroplane first flight and, in case of findings, the accomplishment of corrective actions. As a result of this one-time inspection campaign, a significant number of rod eye-ends have been found cracked. In addition, some cracks have been reported on rod eye-ends that had not yet accumulated the 10,000 FC of the established threshold.

For the reason described above, this [EASA] AD partially retains the initial inspection requirement of EASA AD 2008-0149, which is superseded, reduces the compliance time of the initial inspections and introduces a repetitive inspection program.

The corrective actions include replacing any cracked rod eye-end with a serviceable unit and re-adjusting the elevator servo-control. You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

## **Support for NPRM**

US Airways stated that the NPRM (75 FR 68548, November 8, 2010) will help prevent a possible dual servo control disconnection on the same elevator, which would result in an uncontrolled surface.

## **Request To Change Compliance Time**

Delta Air Lines (Delta) recommended that paragraph (g) of the NPRM (75 FR 68548, November 8, 2010) be simplified to accept the compliance specified in Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010. Delta stated that the current NPRM wording is difficult to correlate between service bulletin instructions and the wording of the AD, and as written, it appears the operators are responsible for compliance to both the FAA AD wording and the service bulletin wording. Delta also stated that the FAA AD wording does not give acceptance to the compliance times for OPTION 2 specified in the tables on pages 22 and 23 of Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010. Delta stated it has used both options that are allowed under Airbus All Operators Telex (AOT) A320-27A1186 Revision 04, dated April 3, 2009.

We disagree with the request to revise the compliance time specified in paragraph (g) of this AD. This AD allows incorporation of Task 271186-832-803-001, referenced as OPTION 2 in Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, as a method for doing the inspection of inboard and outboard servo control rod eye-ends required by this AD; however, the task must be done at the compliance time mandated in this AD. In developing an appropriate compliance time for paragraph (g) of this AD, we considered the safety issues as well as the recommendations of EASA. Delta agreed with the FAA position during a teleconference on June 17, 2011. We have not changed the AD in this regard.

## **Request To Use New Revision of Service Information**

Delta requested that we allow Airbus Mandatory Service Bulletin A320-27A1186, Revision 06, dated December 14, 2010, as an acceptable means of compliance with the NPRM (75 FR 68548, November 8, 2010).

We agree. In addition, we have received Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011. We have revised paragraphs (g), (h), (j), and (m), in this final rule to reference Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011. We have also added table 2 of this AD to provide credit for certain actions done before the effective date of this AD in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, which was cited in the NPRM (75 FR 68548, November 8, 2010) as the appropriate source of service information; and Airbus Mandatory Service Bulletin A320-27A1186, Revision 06, dated December 14, 2010.

## **Request To Provide Clearer Service Information or Allow Deviation From the Service Information Without an Alternative Methods of Compliance (AMOCs) Request**

Delta stated that Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, as written, is confusing and difficult to comply with. Delta stated that it is poorly written for actual maintenance usage and it intermixes tasks that are accomplished on-wing with tasks that are performed in the shop environment. This makes literal compliance with Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010 (and thus the AD) difficult and unnecessarily places the operator at risk of non-compliance. To support its position, this commenter mentioned that, for example, the instructions in Figure A-FBEAA of Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, for re-installing the crack-free rod-end

using the same number of turns previously recorded when the rod-end was removed is meaningless as the rod-end will be installed on a different aircraft, and the number of turns most likely will be different in order to maintain aircraft rig on the new airplane. Delta wanted us to provide clearer language within the service information or allow operators to deviate from Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, as written such that the operator can perform the required work without requesting an AMOC.

We disagree with the request. The example given in Figure A-FBEAA of Airbus Mandatory Service Bulletin A320-27A1186, Revision 05, dated March 10, 2010, for re-installing the crack-free rod-end specifies installation of a spare rod eye-end using the same number of turns previously recorded when the rod eye-end was removed. Therefore recording and re-installing using the same number of turns is necessary. We conclude that the service information is adequate and we have not changed this AD in this regard. However, under the provisions of paragraph (l) of this AD, we will consider requests for approval of an AMOC if sufficient data are submitted to substantiate that a deviation from the service information would provide an acceptable level of safety.

### **Requests To Remove Reporting Requirements**

Delta, US Airways, and Airbus request the removal of the reporting requirement of paragraph (g)(3) of the NPRM (75 FR 68548, November 8, 2010) because Airbus has announced that it is no longer using the reported data to form a technical solution.

Because Airbus no longer needs the reported data to form a technical solution, we agree it is not necessary for operators to submit a report of inspection findings. We have removed paragraphs (g)(3) and (l)(3) of this AD.

### **Request To Change Servo Repetitive Inspection Initial Compliance Time**

Delta requested we add a statement regarding the servos (and the associated rod-end) that are replaced for failure prior to the 10,000 flight-cycle threshold be placed on the repetitive 5,000 flight-cycle period rather than the "first" inspection period after the aircraft reached the 10,000 flight-cycle initial level. Delta stated that the NPRM (75 FR 68548, November 8, 2010) would require the inspection be delayed for aircraft under/less than the 10,000 flight-cycle threshold. Delta stated as the servo "mean time between removals" is currently about 11,000 flight hours, it makes little sense to inspect a replacement rod-end only a few hundred or 1,000 flight cycles after installation. Delta stated it makes sense to apply the 5,000 flight-cycle limit to the rod-end on the replaced servo.

We disagree. If the servos are replaced before accumulating 10,000 total airplane flight cycles as of September 22, 2009 (the effective date of AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009)), then the first inspection in accordance with paragraph (g)(2) of this AD is required at the later of the times specified in paragraphs (g)(2)(ii)(A) and (g)(2)(ii)(B), i.e., before the airplane accumulates 7,500 total flight cycles, or within 40 months after the effective date of this AD, whichever occurs later, but no later than 13,000 total flight cycles on the airplane, followed by repeat inspection in accordance with paragraph (h) of this AD. Therefore, no foreseeable scenario can necessitate an inspection after a few hundred or 1,000 airplane flight cycles. We have not changed this AD in this regard.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

## **Differences Between This AD and the MCAI or Service Information**

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a Note within the AD.

## **Costs of Compliance**

We estimate that this AD will affect about 770 products of U.S. registry.

The actions that are required by AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009), and retained in this AD, take about 13 work-hours per product, at an average labor rate of \$85 per work-hour. Based on these figures, the estimated cost of the currently required actions is \$1,105 per product.

We estimate that it will take about 12 work-hours per product to comply with the new basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of these AD requirements to the U.S. operators to be \$785,400, or \$1,020 per product.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM (75 FR 68548, November 8, 2010), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Amendment 39-15995 (74 FR 41611, August 18, 2009) and adding the following new AD:



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**2011-19-04 Airbus:** Amendment 39-16809. Docket No. FAA-2010-1045; Directorate Identifier 2010-NM-101-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective October 21, 2011.

**Affected ADs**

- (b) This AD supersedes AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009).

**Applicability**

- (c) This AD applies to Airbus Model A318-111, -112, -121, and -122 airplanes; Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes; Model A320-111, -211, -212, -214, -231, -232, and -233 airplanes; and Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes; certificated in any category; all manufacturer serial numbers.

**Subject**

- (d) Air Transport Association (ATA) of America Code 27: Flight controls.

**Reason**

- (e) The mandatory continuing airworthiness information (MCAI) states:

One case of elevator servo-control disconnection has been experienced on an aeroplane of the A320 family. Investigation has revealed that the failure occurred at the servo-control rod eye-end.

Further to this finding, additional inspections have revealed cracking at the same location on a number of other servo-control rod eye-ends. In several cases, both actuators of the same elevator surface were affected. The root cause of the cracking has not yet been determined and tests are ongoing.

A dual servo-control disconnection on the same elevator could result in an uncontrolled surface, the elevator surface being neither actuated nor damped, which could lead to reduced control of the aeroplane.

\* \* \* \* \*

**Compliance**

- (f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**Restatement of Requirements of AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009), With Reduced and Revised Compliance Times and Revised Service Information:**

(g) Unless already done, do the following actions.

(1) At the applicable times specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this AD: Inspect both the left-hand and right-hand inboard elevator servo-control rod eye-ends for cracking, in accordance with the instructions of Airbus All Operators Telex (AOT) A320-27A1186, Revision 04, dated April 3, 2009; or the Accomplishment Instructions of Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011. As of the effective date of this AD, use Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011.

(i) For airplanes that have accumulated 10,000 total flight cycles or more as of September 22, 2009 (the effective date of AD 2009-17-04, Amendment 39-15995 (74 FR 41611, August 18, 2009)): At the later of the times specified in paragraphs (g)(1)(i)(A) and (g)(1)(i)(B) of this AD.

(A) Within 1,500 flight cycles after September 22, 2009.

(B) Within 1,500 flight cycles after accumulating 10,000 total flight cycles since first flight of the airplane.

(ii) For airplanes that have accumulated less than 10,000 total flight cycles as of September 22, 2009: At the later of the times specified in paragraphs (g)(1)(ii)(A) and (g)(1)(ii)(B) of this AD.

(A) Before the accumulation of 5,000 total flight cycles.

(B) Within 20 months after the effective date of this AD but no later than before the accumulation of 11,500 total flight cycles.

(2) At the applicable time specified in paragraphs (g)(2)(i) and (g)(2)(ii) of this AD: Inspect both the left-hand and right-hand outboard elevator servo-control rod eye-ends for cracking, in accordance with the instructions of Airbus AOT A320-27A1186, Revision 04, dated April 3, 2009; or the Accomplishment Instructions of Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011. As of the effective date of this AD, use Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011.

(i) For airplanes that have accumulated 10,000 total flight cycles or more as of September 22, 2009: At the later of the times specified in paragraphs (g)(2)(i)(A) and (g)(2)(i)(B) of this AD.

(A) Within 3,000 flight cycles after September 22, 2009.

(B) Within 3,000 flight cycles after accumulating 10,000 total flight cycles since first flight of the airplane.

(ii) For airplanes that have accumulated less than 10,000 total flight cycles as of September 22, 2009: At the later of the times specified in paragraphs (g)(2)(ii)(A) and (g)(2)(ii)(B) of this AD.

(A) Before the accumulation of 7,500 total flight cycles.

(B) Within 40 months after the effective date of this AD but no later than before the accumulation of 13,000 total flight cycles.

**New Requirements of This AD:**

**Repetitive Inspections and Corrective Action**

(h) Repeat the inspections of the left-hand and right-hand inboard and outboard elevator servo-control rod eye-ends for cracking as required by paragraphs (g)(1) and (g)(2) of this AD at the later of the times specified in paragraph (h)(1) or (h)(2) of this AD. Repeat the inspections thereafter at intervals not to exceed 5,000 flight cycles.

(1) Within 5,000 flight cycles after the last inspection required by paragraph (g)(1) or (g)(2) of this AD as applicable.

(2) Within 6 months after the effective date of this AD.

(i) If any cracking is found during any inspection required by this AD, before further flight, accomplish all applicable corrective actions, in accordance with the Accomplishment Instructions and figures of Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011.



## Parts Installation

(j) As of the effective date of this AD, no person may install on any airplane an elevator servo-control rod eye-end unless it is new or has been inspected in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011, with no crack findings.

## Credit for Actions Accomplished in Accordance With Previous Service Information

(k) Actions done before the effective date of this AD in accordance with the service information specified in table 1 of this AD are acceptable for compliance with the corresponding requirements of paragraphs (g)(1) and (g)(2) of this AD. Actions done before the effective date of this AD in accordance with the service information specified in table 2 of this AD are acceptable for compliance with the corresponding requirements of paragraph (h) of this AD.

**Table 1–Credit Service Information for Paragraph (g) of This AD**

<b>Airbus AOT –</b>	<b>Revision –</b>	<b>Dated –</b>
A320-27A1186	Original	June 23, 2008
A320-27A1186	01	August 11, 2008
A320-27A1186	02	March 30, 2009
A320-27A1186	03	April 1, 2009
A320-27A1186	04	April 3, 2009

**Table 2–Credit Service Information for Paragraph (h) of This AD**

<b>Airbus Service Bulletin –</b>	<b>Revision –</b>	<b>Dated –</b>
A320-27A1186	05	March 10, 2010
A320-27A1186	06	December 14, 2010

## FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: No differences.

## Other FAA AD Provisions

(l) The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to Attn: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1405; fax (425) 227-1149. Information may be e-mailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD. AMOCs approved previously in accordance with AD 2009-17-04,

Amendment 39-15995 (74 FR 41611, August 18, 2009), are approved as AMOCs for the corresponding provisions of this AD.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

### **Related Information**

(m) Refer to MCAI EASA Airworthiness Directive 2010-0046, dated March 19, 2010; and Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, dated March 2, 2011; for related information.

### **Material Incorporated by Reference**

(n) You must use Airbus Mandatory Service Bulletin A320-27A1186, Revision 07, including Appendices 1, 2, 3, 4, 5, and 6, dated March 2, 2011, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Airbus, Airworthiness Office–EAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; e-mail: [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on September 7, 2011.

Jeffrey E. Duven,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.